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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LY, NGHI H

ART UNIT

PAPER NUMBER

2686

DATE MAILED: 03/10/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/661,986

Applicant(s)

ROSEN ET AL.

Examiner

Nghi H. Ly

Art Unit

2686

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia et al (US 6,188,896) in view of Han et al (US 4,343,005) and further in view of Ohm (US 4,364,052).

Regarding claims 1, 9, 15, 17 and 21, Perahia teaches a method of preventing interference in a communication system comprising, the steps of: generating a fixed reuse pattern in a service area from a high altitude communications device (see fig.6),

said pattern having at least a first resource cell and a second resource cell (also see fig.6).

Perahia does not specifically disclose suppressing a side lobe of a beam having a first resource to form a suppressed portion and a non-suppressed portion so that said nonsuppressed portion aligns with said second resource cell.

Han teaches suppressing a side lobe of a beam having a first resource to form a suppressed portion and a non-suppressed portion so that said nonsuppressed portion aligns with said second resource cell (see column 5, lines 24-27, it is obvious that the purpose of side lobe suppression is to allow resource reuse, so the resulting pattern of the suppressed side lobe would be such that the suppressed portion would align with the reused resource and the non-suppressed portion would be other than the reused resource).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the teaching of Han into the system of Perahia so the reuse pattern can be shape according to the traffic pattern.

The combination of Perahia and Han does not specifically disclose selectively suppressing a side lobe of a beam.

Ohm teaches selectively suppressing a side lobe of a beam (see Title, Abstract, and see column 1, line 64 to column 2, line 4, and see column 4, lines 65-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the teaching of Ohm into the system of

Perahia and Han in order to provide antenna arrangement for suppressing selected side lobes (see Ohm, Abstract).

Regarding claim 2, the combination of Perahia, Han and Ohm further teaches the step of selectively suppressing comprises the step of reshaping an antenna to suppress side lobe interference at the interference locations (see Perahia, column 5, lines 21-25 and see column 12, lines 46-48).

Regarding claims 3 and 16, the combination of Perahia, Han and Ohm does not specifically disclose the step of maintaining the shape of the antenna in non-interference locations. However, as explained in claim 1, it is obvious that the purpose of side lobe suppression is to allow resource reuse, so the resulting pattern of the suppressed side lobe would be such that the suppressed portion would align with the reused resource and the non-suppressed portion would be other than the reused resource, and therefore, the shape of the antenna in non-interference location would be maintained.

Regarding claims 4, 12 and 18, the combination of Perahia, Han and Ohm further teaches the first resource and said second resource comprise a frequency (see Perahia, column 4, lines 43-46, "frequency reuse").

Regarding claims 5, 13 and 19, the combination of Perahia, Han and Ohm does not specifically disclose the first resource and said second resource comprise polarization. However, polarization reuse is commonly used for resource reuse and therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention was made to design a system so the first resource and said second resource comprise polarization.

Regarding claims 6, 14 and 20, the combination of Perahia, Han and Ohm does not specifically disclose the first resource and said second resource comprise an orthogonal code. However, orthogonal code reuse is commonly used in CDMA system for resource reuse and therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to design a system so the first resource and said second resource comprise an orthogonal code.

Regarding claims 7, 10 and 23, the combination of Perahia, Han and Ohm further teaches the high altitude communication device comprises a satellite (see Perahia, fig.6).

Regarding claims 8, 11 and 24, the combination of Perahia, Han and Ohm further teaches the high altitude communication device comprises a stratospheric platform (see Perahia, fig.6, it is inherent that in the satellite-based system of Perahia include the system of stratospheric platform).

Regarding claim 22, the combination of Perahia, Han and Ohm further teaches generating the beams using an antenna on-board a high altitude communication device (see Perahia, column 4, lines 29-32).

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Miedema** (US 4,376,940) teaches antenna arrangement for suppressing selected sidelobes.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (703) 605-5164. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly

11066  
02/28/04

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